

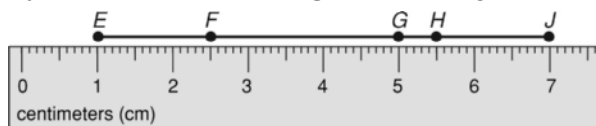
LESSON

1-2

Reteach

Measuring and Constructing Segments

The **distance** between any two points is the **length** of the segment that connects them.



The distance between E and J is EJ , the length of \overline{EJ} . To find the distance, subtract the numbers corresponding to the points and then take the absolute value.

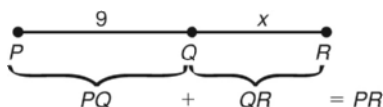
$$\begin{aligned} EJ &= |7 - 1| \\ &= |6| \\ &= 6 \text{ cm} \end{aligned}$$

Use the figure above to find each length.

1. EG

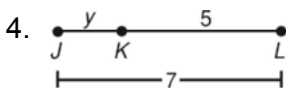
2. EF

3. FH

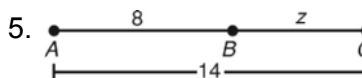


On \overline{PR} , Q is between P and R . If $PR = 16$, we can find QR .

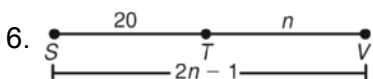
$$\begin{aligned} PQ + QR &= PR \\ 9 + x &= 16 \\ x &= 7 \\ QR &= 7 \end{aligned}$$



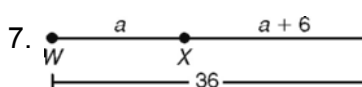
Find JK . _____



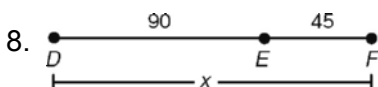
Find BC . _____



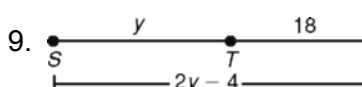
Find SV . _____



Find XY . _____



Find DF . _____



Find ST . _____

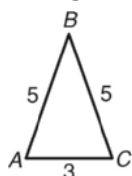
LESSON

1-2

Reteach

Measuring and Constructing Segments *continued*

Segments are **congruent** if their lengths are equal.



$$AB = BC$$

$$\overline{AB} \cong \overline{BC}$$

The length of \overline{AB} equals the length of \overline{BC} .

\overline{AB} is congruent to \overline{BC} .

Copying a Segment

Method	Steps
sketch using estimation	Estimate the length of the segment. Sketch a segment that is about the same length.
draw with a ruler	Use a ruler to measure the length of the segment. Use the ruler to draw a segment having the same length.
construct with a compass and straightedge	Draw a line and mark a point on it. Open the compass to the length of the original segment. Mark off a segment on your line at the same length.

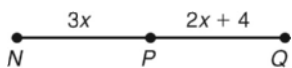
Refer to triangle ABC above for Exercises 10 and 11.

10. Sketch \overline{LM} that is congruent to \overline{AC} . 11. Use a ruler to draw \overline{XY} that is congruent to \overline{BC} .
12. Use a compass to construct \overline{ST} that is congruent to \overline{JK} .





The **midpoint** of a segment separates the segment into two congruent segments.

In the figure, P is the midpoint of \overline{NQ} .



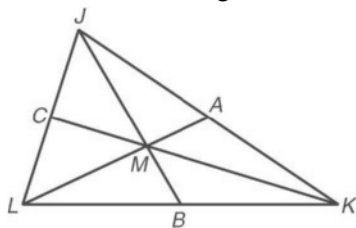
13. \overline{PQ} is congruent to _____.
14. What is the value of x ? _____
15. Find NP , PQ , and NQ . _____

Reteach

- 4 cm
- 1.5 cm
- 3 cm
- 2
- 6
- 41
- 21
- 135
- 22
- 
- 
- \overline{NP} or \overline{PN}
- 4
- 12, 12, 24

Challenge

- Possible drawing:



- Check students' work.
- The centroid is $\frac{2}{3}$ of the distance from each vertex to the midpoint of the opposite side.
- $EN = 2$ cm, $EX = 3$ cm, $\frac{2}{3}$ of 3 cm is 2 cm, therefore $EN = \frac{2}{3}EX$; $FN = 2$ cm, $FY = 3$ cm, therefore $FN = \frac{2}{3}FY$; $GN = 2$ cm, $GW = 3$ cm, therefore $GN = \frac{2}{3}GW$

Problem Solving

- $24\frac{3}{4}$ ft
- 23 ft
- 18 ft
- 9.7 cm and 38.8 cm
- B
- F
- D

Reading Strategies


- $\overline{AB}, \overline{CD}, \overline{BC}, \overline{AD}, \overline{AC}, \overline{BD}, \overline{DE}, \overline{BE}, \overline{CE}$, and \overline{AE}
- Point E
- \overline{AD}

- $\overline{XY} \cong \overline{XZ}; \overline{ZP} \cong \overline{PY}$
- Point P
- \overline{XP}

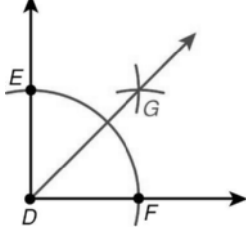
LESSON 1-3

Practice A

- vertex
- \overline{PQ} and \overline{PR}
- $\angle QPR$ and $\angle RPQ$
- point S
- protractor
- 90° ; right
- 60° ; acute
- 180° ; straight

- 
- 125°

Practice B

- 
- $\angle A, \angle C, \angle ABC, \angle ABD, \angle ADB, \angle ADC, \angle CBD,$ and $\angle CDB$
- 90° ; right
- 120° ; obtuse
- 30° ; acute
- 14°
- 123°
- 44°
- $3^\circ 15' 05''$
- 79.958°

Practice C

- $\angle BAE$
- $\angle BAC, \angle DAE, \angle CAD$
- $\angle BAD$ and $\angle CAE$
- a straight angle
- First, Keisha can draw a straight angle (180°). She can then bisect the straight angle to make two right angles (90°). Keisha can then bisect one of the right angles to make a 45° angle.

